

# LT Technologies Hollow Fiber Filtration Systems

LT Technologies brings together both practical design philosophy and system manufacturing capabilities to achieve the lowest cost, highest quality system on the market today. Our experience with Hollow Fiber membrane technologies allows LT Technologies to build value in to each system we offer. With a large installed systems base throughout the world, LT Technologies can provide every industry sector with a solution to its compliance and recycle challenges. This paper endeavors to educate our clients on mechanical workings of hollow fiber filtration. Our goal here at LT Technologies is to highlight the features and benefits so as to educate our client base to make informed decisions and foster questions and ideas.



▲ Versatile Hollow Fiber Microfiltration and Ultrafiltration Systems

## ECONO Features and Benefits:

- E** - Efficient design, simple & durable.
- C** - Cost-effective, long-term solutions. The highest-quality, lowest cost option out there.
- O** - Options: many ECONO Series RO Systems means we have a system to meet your needs.
- N** - Never alone: remote and onsite 24-hour service, we are your total solutions vendor.
- O** - On budget, on-time delivered solutions to meet your product and financial needs.

Hollow fiber cartridges operate from the inside to the outside during filtration. This means that process fluid (retentate) flows through the center of the hollow fiber and permeate passes through the fiber wall to the outside of the membrane fiber. Tangential flow can help limit membrane fouling. Other operating techniques that can be employed with hollow fiber membrane systems include back flushing with permeate and retentate reverse flow.

A major challenge in hollow Fiber filtration system applications is the reduction in filtration capacity during continuous operations or in batch-to-batch processing, due to membrane fouling. Our hollow fiber membrane systems prevent this decline in capacity by minimizing irreversible foulant build-up on the membrane during concentration and clarification applications. The result is a more consistent batch-to-batch product performance and a longer service life. This is accomplished by automated back-pulsing alone or in conjunction with reverse flow processing.

Hollow fiber membrane Filtration systems are an ideal mechanical separation process for industrial product recovery and waste water needs. Oily waste water presents a major pollution control problem for a variety of industries. After separating free floating oil and larger particles the stable oil/water emulsion can be treated with ultra filtration to remove oil/water micelles. Many hollow fiber cartridges produce a water phase that usually can be discharged to a sewer with no additional treatment.

Typical applications for hollow fiber cartridges in food and beverage applications are clarification, concentration fractionation and stabilization of liquids such as:

- Dairy products
- Beer and wine
- Fruit juices
- Vinegar
- Gelatin
- Mineral water

Biopharmaceutical — primary recovery, vaccine purification and concentration, cell washing, cell harvesting, bacteria separation in fermentation broths, debris removal post-centrifugation, primary recovery of recombinant biopharmaceuticals, vaccine purification and concentration, and macromolecule concentration and diafiltration.



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